

DEC 19 2006

SYNNESTVEDT & LECHNER LLP  
In re Application of S. A. Baum  
Application No. 10/671,341

Atty. Docket No. P26,015 USI  
Reply to Office Action dated July 19, 2006  
Reply dated December 19, 2006

### REMARKS

#### **Status of Claims**

Claims 46, 47, 49 to 65 were pending in the present application. Of the pending claims, Claims 59 and 63 to 65 were withdrawn from consideration.

Claims 46, 47, 49 to 51, 54, 56, 57, 60 to 65 have been amended by this Reply.

Claims 52, 53, and 55 has been canceled by this Reply.

New claims 66 to 85 have been added by this Reply.

No new matter has been added by these amendments.

Reconsideration is respectfully requested in light of these amendments and the following remarks.

#### **Remarks on Amendments to the Claims**

Claim 46 of the claim set examined in July 2006 was directed to a method which comprised a step of placing the plurality of supports in a 3D array using a support transfer device. The support transfer device was further defined in Claim 52 as (a) rack, (b) vacuum manifold, and (c) a transfer block device.

By the present Reply, the definition of the rack form of support transfer device as set forth in clause a) of Claim 52 of the claim set examined in July 2006 has been incorporated into Claim 46. Claims 47 to 51, 54, 56 to 62 are dependent on Claim 46.

The limitations of Claim 46 of the claim set examined in July 2006, and definition of the vacuum manifold as set forth in clause b) of Claim 52 of the claim set examined in July 2006, are by this Reply incorporated into a new Claim 66. New Claims 67 to 75 are now dependent on the new Claim 66.

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The limitations of Claim 46 of the claim set examined in July 2006, and the definition of the transfer block as set forth in clause c) of Claim 52 of the claim set examined in July 2006, have been by this Reply incorporated into a new Claim 76. New claims 76 to 85, and presently amended withdrawn claims 63 to 65 are now dependent on the new Claim 66.

The correspondence between the claims presented by this Reply and the claims examined in July 2005 are set forth in the table below.

Claims examined in July 2005	Rack claims	Vacuum manifold claims	Transfer block claims
46	46	66	76
47	47	67	77
49	49	68	78
50	50	69	79
51	51	70	80
52			
53			
54	54	71	81
55			
56	56	72	82
57	57	73	83
58	58	74	84
59	59	75	85
60	60		
61	61		
62	62		
63			63
64			64
65			65

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#### **Additional claim amendments**

Other amendments were made to the claim set, including the ones listed below.

Claim 46 has been amended to recite that the 3D array comprises a plurality of columns of solid phase supports, and that it also comprises a plurality of layers of solid phase supports in the Z direction. Dependent claim 51 has been amended to reflect the amendment to Claim 46. Similar language was used in independent claims 66 and 76, and selected claims dependent thereon.

The phrase "layer of solid phase supports" has been used in place of "plane" when referring to a layer of solid phase supports lying in the same plane. This terminology is now found in Claims 46, 51, 54, 66, 70, 71, 76, 80, and 81.

The phrase -- solid phase support -- is used throughout the claims instead of simply "support".

In the October 2005 Reply, Claim 48 has been deleted, because the recitation of Claim 48 has been incorporated into Claim 46. Dependency of several claims was amended; the dependency of Claim 57 was amended incorrectly. In the present Reply, Claim 57 is amended so that it depends on Claim 46.

#### **Discussion of the Double Patenting Rejection in Paragraph 11. of the Action**

The Examiner rejected Claims 46 to 49 and 54 to 58 under the obviousness-type double patenting in view of claims 1 to 12 in U.S. Patent No. 6,541,211. The Applicant respectfully submits that this rejection is moot in view of the foregoing amendments, which incorporate a definition of support transfer device as defined in Claim 52 into the rejected claims.

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**Discussion of the § 103(a) Rejections in Paragraph 12. of the Action**

The Examiner rejected Claims 46, 47, 49 to 51 and 54 to 58 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,083,682 ("Campbell") in view of any of U.S. patent No. 5,961,923 ("Nova"), WO 97/35198 ("Moran"), or U.S. patent No. 6,045,755 ("Lcbl").

The Applicant respectfully submits that this rejection is moot in view of the foregoing amendments, which incorporate a definition of support transfer device as defined in Claim 52 into the rejected claims.

**Discussion of the §103(a) Rejection in Paragraph 13. of the Action**

Claims 46, 47, 49 to 51, 52 to 58 and 60 to 62 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Campbell in view of Moran, as evidenced by Valerio. The Examiner stated that "Claims 52 and 53 add the limitation of a transfer device consisting essentially of a rack having a plurality of rods inserted through an aperture formed in each support...". The Applicant traverses respectfully this rejection in view of foregoing amendments and for the reasons identified below.

**Crowns of Moran do not contain an aperture**

Claim 46, as amended by the present Reply, incorporates the definition of the support transfer device which is a rack having a plurality of rods sized to be inserted through an aperture formed in each solid phase support.

In Moran, as evidenced by Valerio, discloses solid phase supports in shape of a crown. A crown has a void, but does not contain an aperture. Crowns are snapped

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onto crown carriers, by inserting the end of the crown carrier into the void. Moran, as evidenced by Valerio, discloses that only a single crown can be carried by one crown carrier. Moran does not suggest that a plurality of crowns may be carried by one crown carrier. It would thus not be possible to use a plurality of crown carriers to carry plurality of columns of crowns.

In the presently claimed invention, the solid phase support has an aperture through it. The presence of the aperture is material. The reason for the presence of an aperture in a solid phase support is so that a rod can be inserted through the solid phase support. It is useful for a rod to be inserted through the solid phase support, because a plurality of solid phase supports can be transferred on a single rod. Thus, the support transfer device recited in a part of Claim 46, can transfer a plurality of column of solid phase support. An entire X or Y plane of solid phase supports may be transferred by the use of such support transfer device, making the transfer of solid phase supports faster and more efficient.

Crown holders of Moran cannot be used with the device disclosed in Campbell

Crown holders disclosed in Moran, as evidenced by Valerio, cannot be used or adapted for use to be inserted through apertures in a 3D array disclosed in Campbell, because the device in Campbell comprises membranes between the stacked frames which prevents any rod from reaching through an aperture into the next frame.

Campbell discloses stackable frames having a plurality of holes. Membranes, which act as the solid supports, are trapped between stacked frames, and these membranes are exposed at the frame holes. In an alternative embodiment, solid support beads are placed on flow-through sieves that allow flow-through of reagents around the support beads. Reagents are pumped in from the top and vacated at the bottom or, alternatively, pumped in from the bottom and vacated at the top. The

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apparatus disclosed allows reagents to be delivered to groups of supports in the X-Z planes or in the Y-Z planes during synthesis steps.

Campbell also employs a 3-D (X-Y-Z) array of supports. However, instead of using a containment apparatus having true wells in which solid supports are stacked, the Campbell method employs stackable 2-D (X-Y) frames. Campbell discloses two distinct embodiments of stackable frame structures. One embodiment sandwiches a membrane between stacked frames, the frames having a plurality of holes. The membranes are solid-phase supports which are held between the frames. The frame holes expose the membranes. The membranes also have holes to allow reagents to pass through the layers of membranes and contact other membranes in the vertical "column" of the array. Another embodiment has sieves in place of the membranes, and free solid supports are placed on each sieve between the frames. The sieves allow reagents to flow vertically from top to the bottom of the stacked 3-D array contacting a vertical column of solid-phase supports resting on sieves.

Because there are membranes between the stacked frames, it would not be possible to use a plurality of rods sized to be inserted through an aperture. The membranes between the stacked frames prevents any rod from reaching through an aperture into the next frame.

Reconsideration by the Examiner and withdrawal of this rejection are requested respectfully.

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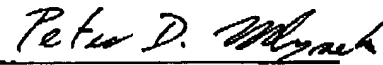
**CONCLUSION**

In view of the foregoing claim amendments and remarks, the Applicant requests that the claims be allowed. In the event any issues remain outstanding, the Examiner is requested to call the undersigned at the telephone number listed below.

A petition for a two-month extension is being filed concurrently herewith. Included herewith is an authorization to charge the extension fee to a credit card. The Commissioner is authorized hereby to charge any additional fees or credit any overpayment associated with this Reply to Deposit Account No. 19-5425.

Respectfully submitted,

Dated: December 19, 2006

  
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